

SERVICE MANUAL



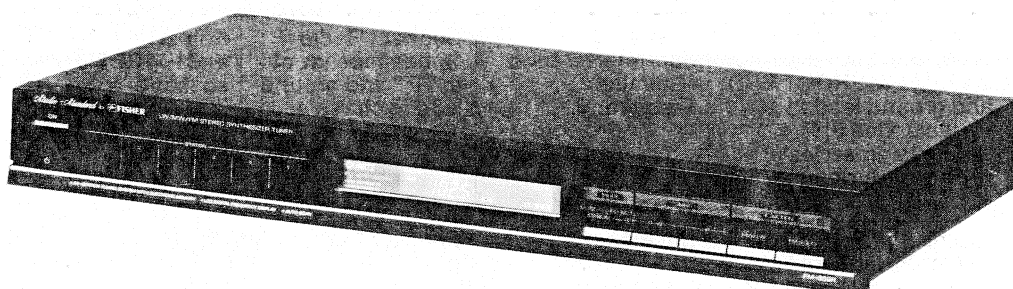
FISHER

LW/MW/FM STEREO SYNTHESIZER TUNER

FM-869R/869

(EUROPE)

This photo is for the model FM-869R.



125 964 41 (FM-869R)

125 964 40 (FM-869)

SPECIFICATIONS

FM SECTION

| | |
|---|------------------------|
| Usable Sensitivity | |
| Mono | 3.0 μ V/14.73 dBf |
| Stereo | 8.0 μ V/23.26 dBf |
| 50 dB Quieting Sensitivity | |
| Mono | 5.0 μ V/19.19 dBf |
| Stereo | 70.0 μ V/42.10 dBf |
| Signal-to-Noise Ratio | |
| Mono | 70 dB |
| Stereo | 65 dB |
| Capture Ratio | 1.5 dB |
| Alt. Channel Selectivity (\pm 400 kHz) | 55 dB |
| Image Response Ratio | 46 dB |
| Spurious Response Ratio | 80 dB |
| IF Response Ratio | 90 dB |
| AM Suppression Ratio | 50 dB |
| Total Harmonic Distortion at 50 dB Quieting | |
| Mono | 0.4 % |
| Stereo | 0.5 % |
| Total Harmonic Distortion at 65 dBf | |
| Mono (100 Hz/1 kHz/6 kHz) | 0.3/0.3/0.4 % |
| Stereo (100 Hz/1 kHz/6 kHz) | 0.5/0.4/0.5 % |

| | |
|---------------------------------------|--------------|
| Stereo Separation | |
| (100 Hz/1 kHz/10 kHz) | 40/45/30 dB |
| Sub-Carrier Rejection (19 kHz/38 kHz) | 60/75 dB |
| Audio Frequency Response | |
| (20 Hz – 15 kHz) | \pm 3.0 dB |

MW SECTION

| | |
|-----------------------|---------------|
| Usable Sensitivity | 600 μ V/m |
| Selectivity | 40 dB |
| Signal-to-Noise Ratio | 55 dB |
| Image Response Ratio | 40 dB |
| IF Response Ratio | 60 dB |

LW SECTION

| | |
|-----------------------|----------------|
| Usable Sensitivity | 2500 μ V/m |
| Selectivity | 35 dB |
| Signal-to-Noise Ratio | 48 dB |
| Image Response Ratio | 35 dB |
| IF Response Ratio | 45 dB |

GENERAL

| | |
|----------------------------|-------------------------|
| Power Requirements (50 Hz) | 110/220V AC 12 Watts |
| Dimensions (W x H x D) | 440 x 57 x 280 mm |
| Weight (approx.) | 2.1 kg |

— Specifications and design are subject to change without notice. —

REFERENCE No. WM-19681

CAUTION ON RF ADJUSTMENT

This model uses a microprocessor for memory preset control for the various bands. This function has been used to preset frequency points for the different bands to permit adjustment and make it possible to check the function of the microprocessor. To use this supplemental function, ground initialize test point TP6 for 1 second before beginning adjustment. The following table shows the initially preset frequencies.

| Band | Memory | | | | | |
|-------|---------|---------|--------|--------|--------|--------|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| FM-1 | 87.5MHz | 108MHz | 88MHz | 98MHz | 108MHz | 90MHz |
| MW/LW | 603kHz | 1404kHz | 999kHz | 160kHz | 350kHz | 250kHz |

FM TUNER ALIGNMENT

FM ALIGNMENT – FUNCTION switch to FM ST/MUTE position.

| ITEM | GENERATOR | DIAL SETTING | INDICATOR | PROCEDURE |
|---|--|--|---|---|
| 1. FM IF S-CURVE ALIGNMENT | Connect 10.7MHz Radio IF Genescope output to 8 Pin of FM FRONT END and ground lead to chassis. Use 5pF capacitor in series with generator output lead. | Position of non-interference Minimum Frequency. | Connect Radio IF Genescope input to TP3 and ground lead to chassis. | Adjust FM DET 1st Coil (L102) and FM DET 2nd Coil (L103) so that S-wave form becomes symmetrical. |
| 2. DETECTOR ADJUSTMENT (MINIMUM T.H.D.) | Connect FM RF signal generator throught FM Dummy Antenna to FM Antenna terminals. Set generator output level to 60dB μ V at 98MHz \pm 2kHz. | Set Preset STATION button to "4" position. Set to 98MHz. | Connect DC Volt-meter across TP8 and TP7. | Adjust FM DET 1st Coil (L102) until DC Voltmeter reads 0V \pm 50mV. |
| | | | Harmonic Distortion Analzyer to TUNER OUT. | Adjust FM DET 2nd Coil (L103) for minimum gain and best linearity. |
| Note: Repeat Step 1 (FM DET 1st Coil L102) and 2 (FM DET 2nd Coil L103) until optimum alignment is reached. | | | | |
| 3. FM MUTING LEVEL ADJUSTMENT | Same as above. Adjust attenuator output level for 50dB μ V. | Same as above. | Scope vertical Input to TUNER OUT. | Set MODE Switch to ST/MUTE. Adjust VR101 until the received wave form becomes half of the maximum form. |
| Note: Decrease the output level of ATT and confirm that the wave form disappears. Increase the output level of ATT again and confirm that the input level meets the specifications sufficiently when the wave form has appeared. | | | | |
| 4. SIGNAL LED METER ADJUSTMENT | Same as above. | Same as above. | Front Panel SIGNAL STRENGTH LED Display. | Adjust VR102 until the fifth signal LED partly lights up. |
| 5. FM STEREO SIGNAL SEPARATION CONTROL | Connect FM Stereo SG to FM Antenna terminals. 19kHz signal ON. Main channel, sub channel signal ON. Apply 1000Hz signal from LEFT channel. | | Connect AC VTVM and Oscilloscope to Right channel TUNER OUT. | Adjust VR301 for minimum output. |
| | Same as above for RIGHT channel. | | Connect AC VTVM and Oscilloscope to Left channel TUNER OUT. | |

Use a screwdriver with plastic grip for all adjustments.

**MW/LW Frequency Cover Range
Tuning Voltage Value at TP1**

(Table 1)

| | 153kHz | 360kHz | 522kHz | 1611kHz |
|---------|--------|--------|--------|---------|
| Minimum | 1.0V | 7.0V | 0.8V | 7.0V |
| Maximum | 1.5V | 9.0V | 1.4V | 9.0V |

AM TUNER ALIGNMENT

AM ALIGNMENT – FUNCTION switch to MW or LW position.
Maintain generator output as low as possible for suitable indication.



Note:
 Perform this alignment after
 FM Tuner Alignment.

| ITEM | GENERATOR | DIAL SETTING | INDICATOR | PROCEDURE |
|---|--|---|---|--|
| 1. AM IF ALIGNMENT | Connect 450kHz Radio IF Genescope output to Pin 1 and 2 Adjust output level to 70dB μ V. | Position of non-interference Minimum Frequency. | Connect Radio IF Genescope input to TP9 and ground lead to chassis. | Adjust AM IFT (L205) for maximum gain and best symmetry. Keep signal low enough for noise on response. |
| 2. MW RF FREQUENCY COVER ALIGNMENT (1611kHz) | Do not connect generator. | Front Panel DIGITAL Counter Display Set to 1611 kHz. | Connect DC Voltmeter to TP1 and ground lead to chassis. | Check DC Voltmeter for Indication 7.0 ~ 9.0V. |
| 3. (522kHz) | Same as above. | DIGITAL Counter Display Set to 522kHz. | Same as above. | Check DC Voltmeter for Indication 0.8 ~ 1.4V. |
| Note: Repeat the adjustments in Items 2 and 3. Then, confirm that each voltage becomes 0.8V to 9.0V at receiving frequency of 522kHz to 1611kHz. (See Table 1) | | | | |
| 4. LW RF FREQUENCY COVER ALIGNMENT (360kHz) | Do not connect generator. | Front Panel DIGITAL Counter Display Set to 360kHz. | Connect DC Voltmeter to TP1 and ground lead to chassis. | Check DC Voltmeter for Indication 7.0 ~ 9.0V. |
| 5. (153kHz) | Same as above. | DIGITAL Counter Display Set to 153kHz. | Same as above. | Check DC Voltmeter for Indication 1.0 ~ 1.5V. |
| Note: Repeat the adjustments in Items 4 and 5. Then, confirm that each voltage becomes 1.0V to 9.0V at receiving frequency of 153kHz to 360kHz. (See Table 1) | | | | |
| 6. MW RF TRACKING ALIGNMENT (603kHz) | Connect Standard Loop Antenna to output terminal of AM RF Signal Generator. Place Loop Antenna 60cm away from Loop antenna (Unit). Generator Setting to 603kHz or 1404kHz. Modulate with 1kHz (30 % modulation). | Set Preset STATION button to "1" position. Set to 603kHz. | Connect AC VTVM and Oscilloscope to TUNER OUT. | Adjust MW ANT Coil (L201) for maximum gain output. |
| 7. (1404kHz) | | Change Preset STATION button to "2" position. Set to 1404kHz. | Same as above. | Adjust MW ANT Trimmer (TC201) for maximum gain output. |
| Note: Repeat the adjustments in Items 6 and 7. Then, confirm there is no tracking error. | | | | |
| 8. LW RF TRACKING ALIGNMENT (160kHz) | Change generator setting to 160kHz. | Set Preset STATION button to "4" position. Set to 160kHz. | Connect AC VTVM and Oscilloscope to TUNER OUT. | Adjust LW ANT Coil (L202) for maximum gain output. |
| 9. (350kHz) | Change generator setting to 350kHz. | Change Preset STATION button to "5" position. Set to 350kHz. | Same as above. | Adjust LW ANT Trimmer (TC202) for maximum gain output. |
| Note: Repeat the adjustments in Items 8 and 9. Then, confirm there is no tracking error. | | | | |
| 10. AM AUTO STOP SENSITIVITY ADJUSTMENT | Change generator setting to 999kHz and output level to 60dB μ V/m. | Set Preset STATION button to "3" position. Set to 999kHz. | Front Panel TUNED Indicator Display. | Adjust VR201 until the TUNED Indicator partly light up. |

Use a screwdriver with plastic grip for all adjustments.

CABINET & CHASSIS PARTS LIST/EXPLODED VIEW

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol  in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.

Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

| Ref. No. | Part No. | Description | Q'ty |
|----------|----------|-------------|------|
|----------|----------|-------------|------|

PACKAGE

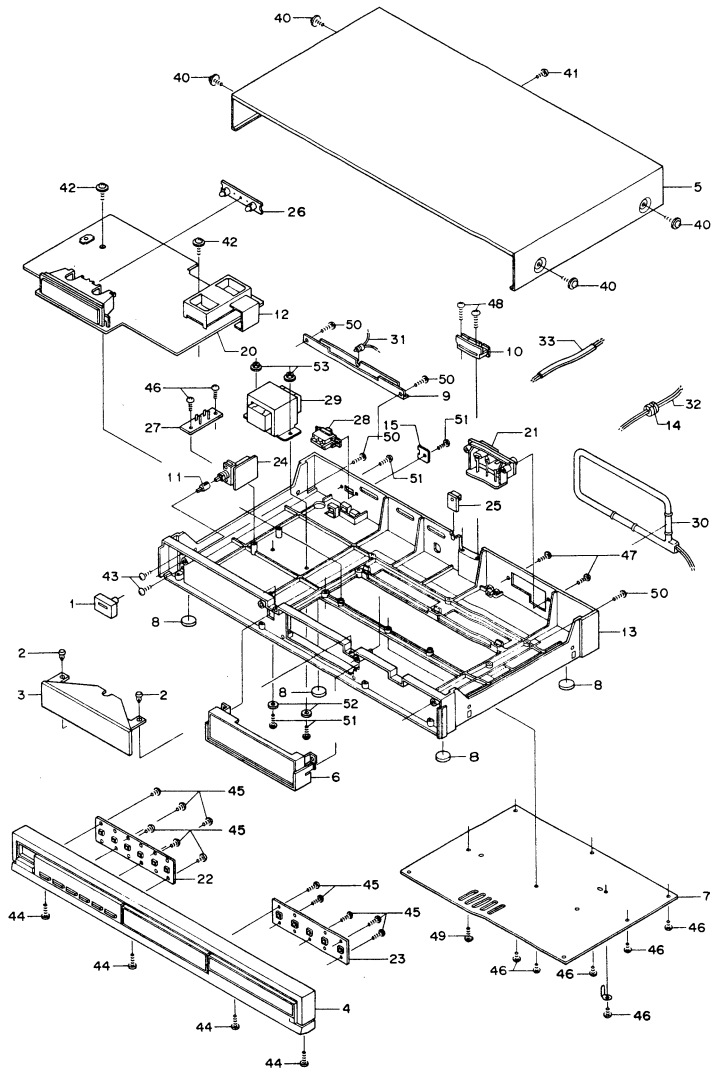
| | | |
|------------------|------------------------------|---|
| 131-6-1169-16836 | Box Corrugate-Exp. (FM-869R) | 1 |
| 131-6-1169-16835 | Box Corrugate-Exp. (FM-869) | 1 |
| 131-6-3009-35610 | Pad Right | 1 |
| 131-6-3009-35620 | Pad Left | 1 |
| 131-6-3069-16350 | Patching Sheet | 1 |
| 141-6-4559-03300 | Serial No. Sheet | 2 |
| 131-6-4559-11200 | Serial No. Sheet | 2 |
| 141-6-2519-10019 | Poly Cover 100 X 190 | 1 |
| 141-6-2519-22290 | Sheet Polyethylene | 1 |

ACCESSORIES

| | | |
|------------------|-------------------------------|---|
| 131-0-4012-00180 | FM Antenna Assy | 1 |
| 131-6-2719-10401 | Bag Fan | 1 |
| 141-2-1729-00500 | Holder Antenna | 1 |
| 142-6-4119-33424 | Explanatory Booklet (FM-869R) | 1 |
| 142-6-4119-33423 | Explanatory Booklet (FM-869) | 1 |

CABINET & CHASSIS

| | | | |
|----|------------------|--|---|
| | 4-2352-02335 | Connector 5P Assy [PC503] (FM-869R only) | 1 |
| | 4-2379-21520 | Terminal Lug | 1 |
| | 131-6-4559-11200 | Serial No. Sheet | 1 |
| | 141-2-1419-25517 | Rating Plate (FM-869R) | 1 |
| | 141-2-1419-25516 | Rating Plate (FM-869) | 1 |
| | 141-2-4729-07100 | Wire Band | 7 |
| 1 | 131-2-1601-93302 | Knob Power | 1 |
| 2 | 131-2-4221-00600 | Rivet | 2 |
| 3 | 131-2-6308-23504 | Filter (Clear) | 1 |
| 4 | 141-0-1129-25210 | Cabinet Front Assy (FM-869R) | 1 |
| | 141-0-1619-36600 | Knob Assy (Function) | 1 |
| | 141-2-1659-75200 | Knob Cap | 5 |
| | 141-2-2629-10100 | Holder Knob | 1 |
| | 141-2-1129-51801 | Cabinet Front | 1 |
| | 141-2-1319-52500 | Window | 1 |
| | 141-2-1449-61296 | Plate Front | 1 |
| | 141-2-1449-75801 | Plate Decorate | 1 |
| | 141-2-1659-77600 | Knob (Tact SW) | 1 |
| | 411 020 5706 | SCR S-TPG BRZ 2.6X8 | 3 |
| 4 | 141-0-1129-25209 | Cabinet Front Assy (FM-869) | 1 |
| | 141-0-1619-36600 | Knob Assy (Function) | 1 |
| | 141-2-1659-75200 | Knob Cap | 5 |
| | 141-2-2629-10100 | Holder Knob | 1 |
| | 141-2-1129-51801 | Cabinet Front | 1 |
| | 141-2-1319-52500 | Window | 1 |
| | 141-2-1449-61286 | Plate Front | 1 |
| | 141-2-1449-75801 | Plate Decorate | 1 |
| | 141-2-1659-77600 | Knob (Tact SW) | 1 |
| | 411 020 5706 | SCR S-TPG BRZ 2.6X8 | 3 |
| 5 | 141-2-1119-93300 | Cover | 1 |
| 6 | 141-0-1149-17300 | Mount Screen Assy | 1 |
| | 131-2-6308-23603 | Filter | 1 |
| | 141-2-1149-55400 | Mount Screen | 1 |
| 7 | 131-2-1410-35600 | Cover Bottom | 1 |
| 8 | 131-2-1801-16200 | Leg | 4 |
| 9 | 131-2-3310-18500 | Metal Mount Lamp | 1 |
| 10 | 131-2-3608-16900 | Cramp Wire | 1 |
| 11 | 131-2-4219-17100 | Shaft | 1 |



| Ref. No. | Part No. | Description | Q'ty |
|----------|------------------|-----------------------------|------|
| 12 | 131-2-6103-24400 | Cover Shield | 1 |
| 13 | 141-2-3119-30004 | Chassis Cabinet (FM-869R) | 1 |
| 13 | 141-2-3119-30003 | Chassis Cabinet (FM-869) | 1 |
| 14 | 131-2-6111-14200 | Bushing (4N-4) | 1 |
| 15 | 131-2-7104-00500 | Plate Pad Switch | 1 |
| 20 | 141-0-1939-21043 | Tuner P.C.B. Assy (FM-869R) | 1 |
| 20 | 141-0-1939-21044 | Tuner P.C.B. Assy (FM-869) | 1 |
| 21 | 141-0-1939-21051 | Antenna P.C.B. Assy | 1 |
| 22 | 141-0-1939-21060 | Memory SW. P.C.B. Assy | 1 |
| 23 | 141-0-1939-21070 | Band SW. P.C.B. Assy | 1 |
| 24 | 141-0-1939-21080 | Power SW. P.C.B. Assy | 1 |
| 25 | 141-0-1939-21090 | Top Cover E.M.P.C.B. Assy | 1 |

CABINET & CHASSIS PARTS LIST

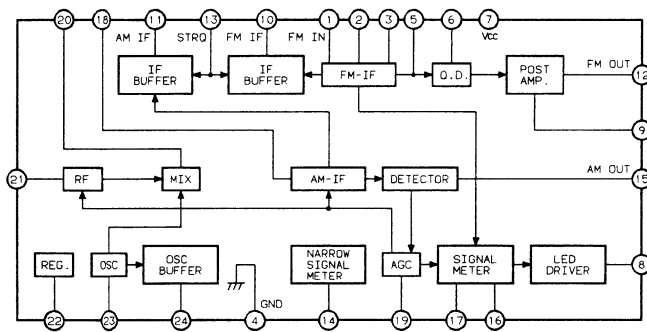
| Ref. No. | Part No. | Description | Q'ty | Ref. No. | Part No. | Description | Q'ty |
|----------|------------------|-----------------------------------|------|----------|------------------|--------------------|------|
| 26 | 141-0-1939-21100 | Lamp P.C.B. Assy | 1 | 46 | 411 020 8004 | SCR S-TPG BRZ 3X8 | 8 |
| 27 | 141-0-1939-21120 | EC Terminal P.C.B. Assy | 1 | 47 | 411 099 9506 | SCR S-TPG BRZ 3X10 | 2 |
| 28 | △ 4-2312-02650 | Switch Slide (AC Selector) [S713] | 1 | 48 | 411 020 6208 | SCR S-TPG BRZ 3X12 | 2 |
| 29 | △ 4-2512-35320 | Power Trans | 1 | 49 | 411 020 6604 | SCR S-TPG BRZ 3X14 | 1 |
| 30 | 4-2579-71601 | Loop Antenna | 1 | 50 | 411 020 7007 | SCR S-TPG BRZ 3X20 | 4 |
| 31 | 4-6129-70712 | Lamp | 1 | 51 | 411 040 6400 | SCR PAN 3X10 | 4 |
| 32 | 4-2369-74591 | Plug Cord RCA (Output) | 1 | 52 | 411 092 9503 | WASHER Z 3.2X8X1 | 2 |
| 33 | △ 4-2432-00502 | Power Cord | 1 | 53 | 131-2-4202-12903 | Flange Nut M3X8 Z | 2 |
| 40 | 141-2-4219-38400 | +BTS-B 4X8 Sems BLK | 4 | | | | |
| 41 | 131-2-4201-25303 | +BRTS-B 3X10 BL Sems | 1 | | | | |
| 42 | 131-2-4201-25201 | +BRTS-B Sems 3X8 Z | 2 | | | | |
| 43 | 411 002 8503 | SCR PAN 3X6 | 2 | | | | |
| 44 | 411 021 3206 | SCR S-TPG BIN 2.6X8 | 4 | | | | |
| 45 | 411 020 5508 | SCR S-TPG BRZ 2.6X6 | 11 | | | | |

NOTES:

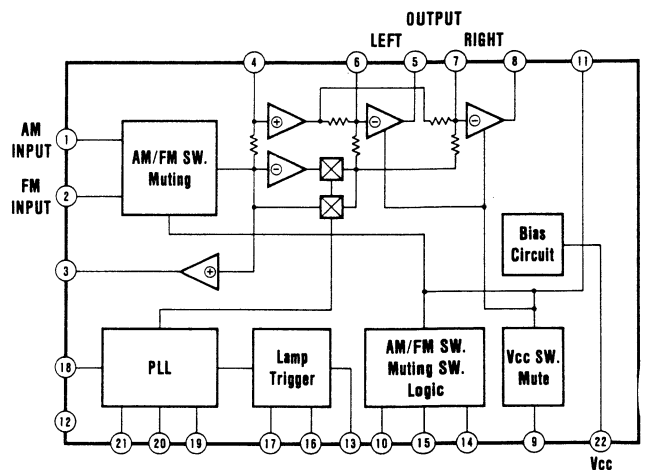
1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

INTEGRATED CIRCUIT BLOCK DIAGRAM

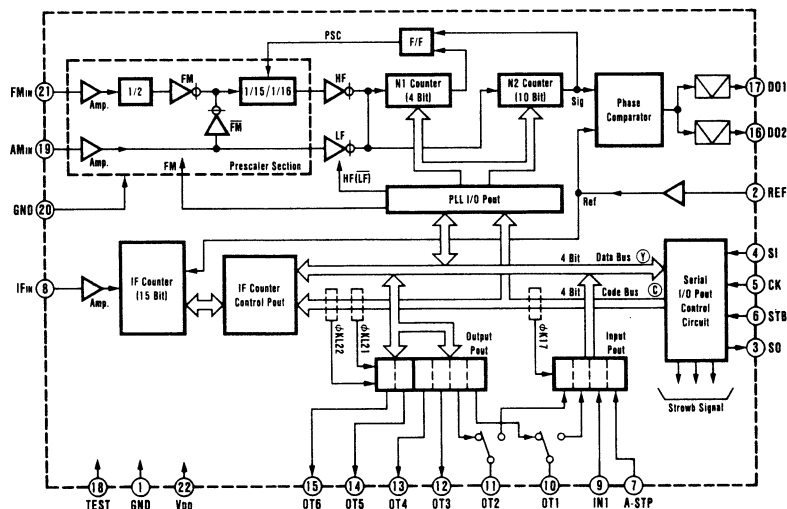
AM RF IF/FM IF IC LA 1266



FM MPX AM/FM SWITCH IC LA 3400



PRESCALER AND PLL CONTROL IC TC 9171P



P.C.BOARD PARTS LIST

| Ref. No. | Part No. | Description | Q'ty | Ref. No. | Part No. | Description | Q'ty |
|---|--|-----------------------------|------|----------|--------------|-----------------------|------|
| TUNER P.C.B. ASSY | | | | D511 | 407 005 3805 | DIODE DS442-BT | 1 |
| 20 | 141-0-1939-21043 | Tuner P.C.B. Assy | 1 | D513 | 407 061 2200 | DIODE 1SS254-TA | 1 |
| | 4-1259-72066 | FM Front END | 1 | D513 | 407 008 0405 | DIODE GMB01-BT | 1 |
| | (Component parts used in Front End are not serviceable and available.) | | | D514 | 407 005 3805 | DIODE DS442-BT | 1 |
| | 4-2359-79038 | Connector 1P Assy | 2 | D515 | 407 012 8503 | DIODE 1SS53 | 1 |
| | 4-9549-70090 | LCD, FTD6410 | 1 | D517 | 407 061 2200 | DIODE 1SS254-TA | 1 |
| | 111-2-6220-11100 | Wire Wrap Terminal | 15 | or | 407 008 0405 | DIODE GMB01-BT | 1 |
| | 131-2-6201-33600 | Plate Heat Sink (for IC401) | 1 | D519 | 407 061 2200 | DIODE 1SS254-TA | 1 |
| | 131-2-6306-12400 | Reflector | 1 | or | 407 008 0405 | DIODE GMB01-BT | 1 |
| | 131-2-6308-25500 | Filter | 1 | D801 | 407 049 8101 | ZENER DIODE GZA2.0X | 1 |
| | 141-2-3229-60200 | Plate Earth | 1 | C201 | 407 000 4708 | VARACTOR DI SVC321C-2 | 1 |
| | 411 020 8004 | SCR S-TPG BRZ 3X8 | 1 | R536 | 407 005 3805 | DIODE DS442-BT | 1 |
| PC503 | 4-2369-73150 | Plug 5P | 1 | IC101 | 409 073 9505 | IC LA1266 | 1 |
| CF101 | 4-2279-70190 | Ceramic Filter 10.7MHz | 1 | IC301 | 409 017 0803 | IC LA3400 | 1 |
| CF102 | 4-2272-00301 | Ceramic Filter 10.7MHz | 1 | IC401 | 409 074 0808 | IC LA5667 | 1 |
| CF201 | 4-2272-00230 | Ceramic Filter 450kHz | 1 | IC501 | 410 014 9607 | IC TSE2039AF-020 | 1 |
| CF301 | 4-2279-70080 | Ceramic OSC | 1 | IC502 | 409 072 1005 | IC TC9171P | 1 |
| CF501 | 4-2259-71060 | Crystal 7.2MHz | 1 | Q101 | 405 011 7503 | TR 2SC1740-S | 1 |
| F401 | △ 4-2349-70620 | Protector ICP-5 (0.25A) | 1 | Q103 | 405 004 5004 | TR 2SA608-G-NP | 1 |
| L101A | 4-2529-70510 | Filter 1st | 1 | Q104 | 405 019 3804 | TR 2SC536-G-NP | 1 |
| L101B | 4-2529-70511 | Filter 2nd | 1 | or | 405 011 7503 | TR 2SC1740-S | 1 |
| L102 | 4-2569-72220 | IFT, FM DET 1st | 1 | Q201 | 405 027 0505 | TR 2SK246-GR | 1 |
| L103 | 4-2569-72230 | IFT, FM DET 2nd | 1 | or | 405 034 6002 | TR 2SK381-D | 1 |
| L104 | 4-2529-70231 | Anti Birdie Filter | 1 | Q202 | 405 021 0808 | TR 2SD1012-H | 1 |
| L201 | 4-2579-71730 | MW ANT Coil | 1 | Q203 | 405 019 3804 | TR 2SC536-G-NP | 1 |
| L202 | 4-2579-71740 | LW ANT Coil | 1 | or | 405 011 7503 | TR 2SC1740-S | 1 |
| L203 | 4-2589-72476 | MW OSC Coil | 1 | Q204 | 405 019 3804 | TR 2SC536-G-NP | 1 |
| L204 | 4-2589-72486 | LW OSC Coil | 1 | or | 405 011 7503 | TR 2SC1740-S | 1 |
| L205 | 4-2569-72031 | AM IFT | 1 | Q205 | 405 019 3804 | TR 2SC536-G-NP | 1 |
| L301 | 4-2529-70330 | LP Filter | 1 | or | 405 011 7503 | TR 2SC1740-S | 1 |
| L302 | 4-2529-70330 | LP Filter | 1 | Q206 | 405 004 5004 | TR 2SA608-G-NP | 1 |
| L303 | 4-2539-71420 | Choke Coil (100μH) | 1 | Q207 | 405 004 3901 | TR 2SA608-E-NP | 1 |
| L304 | 4-2539-71420 | Choke Coil (100μH) | 1 | Q208 | 405 019 3804 | TR 2SC536-G-NP | 1 |
| L501 | 4-2539-71350 | Choke Coil (1mH) | 1 | or | 405 011 7503 | TR 2SC1740-S | 1 |
| TC201 | 4-2249-70581 | Trimmer Condenser | 1 | Q209 | 405 011 7107 | TR 2SC1740-E | 1 |
| TC202 | 4-2249-71160 | Trimmer 20PF | 1 | Q301 | 405 019 3804 | TR 2SC536-G-NP | 1 |
| VR101 | 4-2229-76560 | Potentiometer (B-100kΩ) | 1 | or | 405 011 7503 | TR 2SC1740-S | 1 |
| VR102 | 4-2229-76561 | Potentiometer (B-10kΩ) | 1 | Q401 | 405 004 3901 | TR 2SA608-E-NP | 1 |
| VR201 | 4-2229-76562 | Potentiometer (B-20kΩ) | 1 | Q402 | 405 021 0808 | TR 2SD1012-H | 1 |
| VR301 | 4-2229-76560 | Potentiometer (B-100kΩ) | 1 | Q403 | 405 021 0808 | TR 2SD1012-H | 1 |
| If necessary, replace both Diode D202, C201 (SVC 321) together with new ones which have the equivalent characteristics. | | | | Q501 | 405 004 5004 | TR 2SA608-G-NP | 1 |
| D101 | 407 005 3805 | DIODE DS442-BT | 1 | Q502 | 405 004 5004 | TR 2SA608-G-NP | 1 |
| D202 | 407 000 4708 | VARACTOR DI SVC321C-2 | 1 | Q503 | 405 004 5004 | TR 2SA608-G-NP | 1 |
| D203 | 407 061 2200 | DIODE 1SS254-TA | 1 | Q504 | 405 004 5004 | TR 2SA608-G-NP | 1 |
| or | 407 008 0405 | DIODE GMB01-BT | 1 | Q505 | 405 004 5004 | TR 2SA608-G-NP | 1 |
| D204 | 407 061 2200 | DIODE 1SS254-TA | 1 | Q506 | 405 027 0604 | TR 2SK246-Y | 1 |
| or | 407 008 0405 | DIODE GMB01-BT | 1 | or | 405 034 5906 | TR 2SK381-C | 1 |
| D205 | 407 005 3805 | DIODE DS442-BT | 1 | Q507 | 405 011 7107 | TR 2SC1740-E | 1 |
| D401 | 407 005 2105 | DIODE DS135D-KB3 | 1 | or | 405 012 1807 | TR 2SC1815-BL | 1 |
| D402 | 407 005 2105 | DIODE DS135D-KB3 | 1 | C102 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 |
| D403 | 407 005 2105 | DIODE DS135D-KB3 | 1 | C104 | 403 047 1502 | ELECT 4.7U M 25V | 1 |
| D404 | 407 005 2105 | DIODE DS135D-KB3 | 1 | C105 | 403 074 2701 | CERAMIC 0.047U Z 50V | 1 |
| D501 | 407 005 3805 | DIODE DS442-BT | 1 | C106 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 |
| D505 | 407 005 3805 | DIODE DS442-BT | 1 | C107 | 403 044 0201 | ELECT 47U M 16V | 1 |
| D507 | 407 061 2200 | DIODE 1SS254-TA | 1 | C110 | 403 074 2701 | CERAMIC 0.047U Z 50V | 1 |
| or | 407 008 0405 | DIODE GMB01-BT | 1 | C111 | 403 074 2701 | CERAMIC 0.047U Z 50V | 1 |
| D508 | 407 061 2200 | DIODE 1SS254-TA | 1 | C112 | 403 042 3501 | ELECT 100U M 16V | 1 |
| or | 407 005 3805 | DIODE DS442-BT | 1 | C113 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 |
| or | 407 008 0405 | DIODE GMB01-BT | 1 | C114 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 |
| D510 | 407 005 3805 | DIODE DS442-BT | 1 | C115 | 403 049 1609 | ELECT 1U M 50V | 1 |
| | | | | C116 | 403 075 4308 | CERAMIC 820P K 50V | 1 |
| | | | | C117 | 403 039 2906 | ELECT 47U M 6.3V | 1 |
| | | | | C118 | 403 074 6501 | CERAMIC 560P K 50V | 1 |
| | | | | C119 | 403 073 6502 | CERAMIC 470P K 50V | 1 |
| | | | | C120 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 |
| | | | | C121 | 403 038 2303 | ELECT 100U M 6.3V | 1 |

P.C.BOARD PARTS LIST(Continued)

| Ref. No. | Part No. | Description | Q'ty | Ref. No. | Part No. | Description | Q'ty |
|----------|--------------|------------------------|------|----------|--------------|----------------------|------|
| C122 | 403 049 1609 | ELECT 1U M 50V | 1 | C519 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 |
| C123 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 | C520 | 403 038 2303 | ELECT 100U M 6.3V | 1 |
| C124 | 403 049 1609 | ELECT 1U M 50V | 1 | C521 | 403 069 0705 | CERAMIC 1000P K 50V | 1 |
| C126 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 | C522 | 403 049 1609 | ELECT 1U M 50V | 1 |
| C127 | 403 014 6202 | CERAMIC 18P K 50V | 1 | C523 | 403 038 2303 | ELECT 100U M 6.3V | 1 |
| C202 | 403 026 9406 | CERAMIC 5P C 50V | 1 | C524 | 403 042 3501 | ELECT 100U M 16V | 1 |
| C203 | 403 026 5408 | CERAMIC 47P K 50V | 1 | C531 | 403 049 1609 | ELECT 1U M 50V | 1 |
| C204 | 403 074 2701 | CERAMIC 0.047U Z 50V | 1 | C533 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 |
| C205 | 403 074 2701 | CERAMIC 0.047U Z 50V | 1 | C534 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 |
| C206 | 403 074 2701 | CERAMIC 0.047U Z 50V | 1 | C535 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 |
| C207 | 403 074 2701 | CERAMIC 0.047U Z 50V | 1 | CF202 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 |
| C208 | 403 050 1209 | ELECT 2.2U M 50V | 1 | D201 | 403 074 2701 | CERAMIC 0.047U Z 50V | 1 |
| C209 | 403 031 0306 | CERAMIC 68P K 50V | 1 | R101 | 401 012 4107 | CARBON 100 JA 1/4W | 1 |
| C210 | 403 088 4104 | STYRENE 430P J 50V | 1 | R102 | 401 024 7707 | CARBON 100K JA 1/6W | 1 |
| C211 | 403 014 6202 | CERAMIC 18P K 50V | 1 | R103 | 401 022 4104 | CARBON 68K JA 1/4W | 1 |
| C212 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 | R104 | 401 024 7400 | CARBON 10K JA 1/6W | 1 |
| C213 | 403 088 1103 | STYRENE 330P J 50V | 1 | R105 | 401 019 9204 | CARBON 47 JA 1/4W | 1 |
| C214 | 403 074 2701 | CERAMIC 0.047U Z 50V | 1 | R107 | 401 026 4308 | CARBON 3.3K JA 1/6W | 1 |
| C215 | 403 074 2701 | CERAMIC 0.047U Z 50V | 1 | R110 | 401 019 9600 | CARBON 47 JA 1/4W | 1 |
| C216 | 403 042 0302 | ELECT 10U M 16V | 1 | R111 | 401 027 5502 | CARBON 6.8K JA 1/6W | 1 |
| C217 | 403 026 5408 | CERAMIC 47P K 50V | 1 | R112 | 401 026 1000 | CARBON 2.7K JA 1/6W | 1 |
| C218 | 403 050 7706 | ELECT 3.3U M 50V | 1 | R113 | 401 026 4308 | CARBON 3.3K JA 1/6W | 1 |
| C219 | 403 047 1502 | ELECT 4.7U M 25V | 1 | R114 | 401 016 3809 | CARBON 2.2K JA 1/4W | 1 |
| C220 | 403 047 1502 | ELECT 4.7U M 25V | 1 | R115 | 401 027 5502 | CARBON 6.8K JA 1/6W | 1 |
| C221 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 | R116 | 401 016 4806 | CARBON 22K JA 1/4W | 1 |
| C222 | 403 003 6701 | CERAMIC 0.033U K 25V | 1 | R117 | 401 027 0309 | CARBON 47K JA 1/6W | 1 |
| C223 | 403 075 0508 | CERAMIC 6800P K 50V | 1 | R118 | 401 012 8105 | CARBON 100K JA 1/4W | 1 |
| C224 | 403 071 7501 | CERAMIC 2200P K 50V | 1 | R119 | 401 016 1102 | CARBON 22 JA 1/4W | 1 |
| C301 | 403 042 0302 | ELECT 10U M 16V | 1 | R120 | 401 027 0309 | CARBON 47K JA 1/6W | 1 |
| C302 | 403 020 6203 | CERAMIC 270P K 50V | 1 | R121 | 401 026 4308 | CARBON 3.3K JA 1/6W | 1 |
| C303 | 403 062 0900 | POLYESTER 0.047U K 50V | 1 | R122 | 401 012 5708 | CARBON 1K JA 1/4W | 1 |
| C305 | 403 042 0302 | ELECT 10U M 16V | 1 | R124 | 401 024 7707 | CARBON 100K JA 1/6W | 1 |
| C306 | 403 048 7602 | ELECT 0.47U M 50V | 1 | R128 | 401 020 2904 | CARBON 47K JA 1/4W | 1 |
| C307 | 403 049 1609 | ELECT 1U M 50V | 1 | R133 | 401 027 0309 | CARBON 47K JA 1/6W | 1 |
| C308 | 403 047 1502 | ELECT 4.7U M 25V | 1 | R201 | 401 020 3901 | CARBON 470K JA 1/4W | 1 |
| C309 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 | R202 | 401 024 7004 | CARBON 1K JA 1/6W | 1 |
| C311 | 403 020 6203 | CERAMIC 270P K 50V | 1 | R203 | 401 027 0507 | CARBON 470K JA 1/6W | 1 |
| C312 | 403 020 6203 | CERAMIC 270P K 50V | 1 | R204 | 401 026 6609 | CARBON 390 JA 1/6W | 1 |
| C313 | 403 050 1209 | ELECT 2.2U M 50V | 1 | R205 | 401 026 1000 | CARBON 2.7K JA 1/6W | 1 |
| C314 | 403 050 1209 | ELECT 2.2U M 50V | 1 | R206 | 401 012 4503 | CARBON 100 JA 1/4W | 1 |
| C315 | 403 073 8407 | CERAMIC 4700P K 50V | 1 | R207 | 401 024 7004 | CARBON 1K JA 1/6W | 1 |
| C316 | 403 073 8407 | CERAMIC 4700P K 50V | 1 | R208 | 401 021 3009 | CARBON 5.6K JA 1/4W | 1 |
| C401 | 403 074 2701 | CERAMIC 0.047U Z 50V | 1 | R209 | 401 025 7805 | CARBON 2.2K JA 1/6W | 1 |
| C402 | 403 074 2701 | CERAMIC 0.047U Z 50V | 1 | R210 | 401 020 2003 | CARBON 4.7K JA 1/4W | 1 |
| C403 | 403 074 2701 | CERAMIC 0.047U Z 50V | 1 | R211 | 401 025 8208 | CARBON 22K JA 1/6W | 1 |
| C404 | 403 074 2701 | CERAMIC 0.047U Z 50V | 1 | R212 | 401 016 4806 | CARBON 22K JA 1/4W | 1 |
| C405 | 403 045 2808 | ELECT 1000U M 25V | 1 | R213 | 401 012 5708 | CARBON 1K JA 1/4W | 1 |
| C406 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 | R214 | 401 024 7707 | CARBON 100K JA 1/6W | 1 |
| C407 | 403 042 0302 | ELECT 10U M 16V | 1 | R215 | 401 025 8208 | CARBON 22K JA 1/6W | 1 |
| C408 | 403 040 2704 | ELECT 22U M 10V | 1 | R216 | 401 026 9907 | CARBON 4.7K JA 1/6W | 1 |
| C409 | 403 049 1609 | ELECT 1U M 50V | 1 | R217 | 401 027 5502 | CARBON 6.8K JA 1/6W | 1 |
| C501 | 403 040 6603 | ELECT 2200U M 10V | 1 | R218 | 401 012 8105 | CARBON 100K JA 1/4W | 1 |
| C502 | 403 040 4708 | ELECT 220U M 10V | 1 | R219 | 401 016 4806 | CARBON 22K JA 1/4W | 1 |
| C503 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 | R220 | 401 027 2600 | CARBON 5.6K JA 1/6W | 1 |
| C504 | 403 019 7303 | CERAMIC 27P J 50V | 1 | R221 | 401 024 7707 | CARBON 100K JA 1/6W | 1 |
| C505 | 403 019 7303 | CERAMIC 27P J 50V | 1 | R222 | 401 026 9907 | CARBON 4.7K JA 1/6W | 1 |
| C506 | 403 049 1609 | ELECT 1U M 50V | 1 | R223 | 401 025 7102 | CARBON 22 JA 1/6W | 1 |
| C507 | 403 026 5408 | CERAMIC 47P K 50V | 1 | R224 | 401 025 4606 | CARBON 18K JA 1/6W | 1 |
| C508 | 403 074 2701 | CERAMIC 0.047U Z 50V | 1 | R225 | 401 022 3107 | CARBON 6.8K JA 1/4W | 1 |
| C509 | 403 026 5408 | CERAMIC 47P K 50V | 1 | R226 | 401 014 4105 | CARBON 1.5K JA 1/4W | 1 |
| C510 | 403 004 9503 | CERAMIC 2200P K 50V | 1 | R227 | 401 018 3807 | CARBON 3.3K JA 1/4W | 1 |
| C514 | 403 026 5408 | CERAMIC 47P K 50V | 1 | R228 | 401 027 0309 | CARBON 47K JA 1/6W | 1 |
| C515 | 403 057 0908 | POLYESTER 0.01U K 50V | 1 | R229 | 401 012 8105 | CARBON 100K JA 1/4W | 1 |
| C516 | 403 002 2902 | CERAMIC 0.01U M 25V | 1 | R230 | 401 012 5708 | CARBON 1K JA 1/4W | 1 |
| C517 | 403 026 5408 | CERAMIC 47P K 50V | 1 | R231 | 401 012 7009 | CARBON 10K JA 1/4W | 1 |
| C518 | 403 069 1504 | CERAMIC 1000P K 50V | 1 | R232 | 401 024 7400 | CARBON 10K JA 1/6W | 1 |

P.C.BOARD PARTS LIST (Continued)

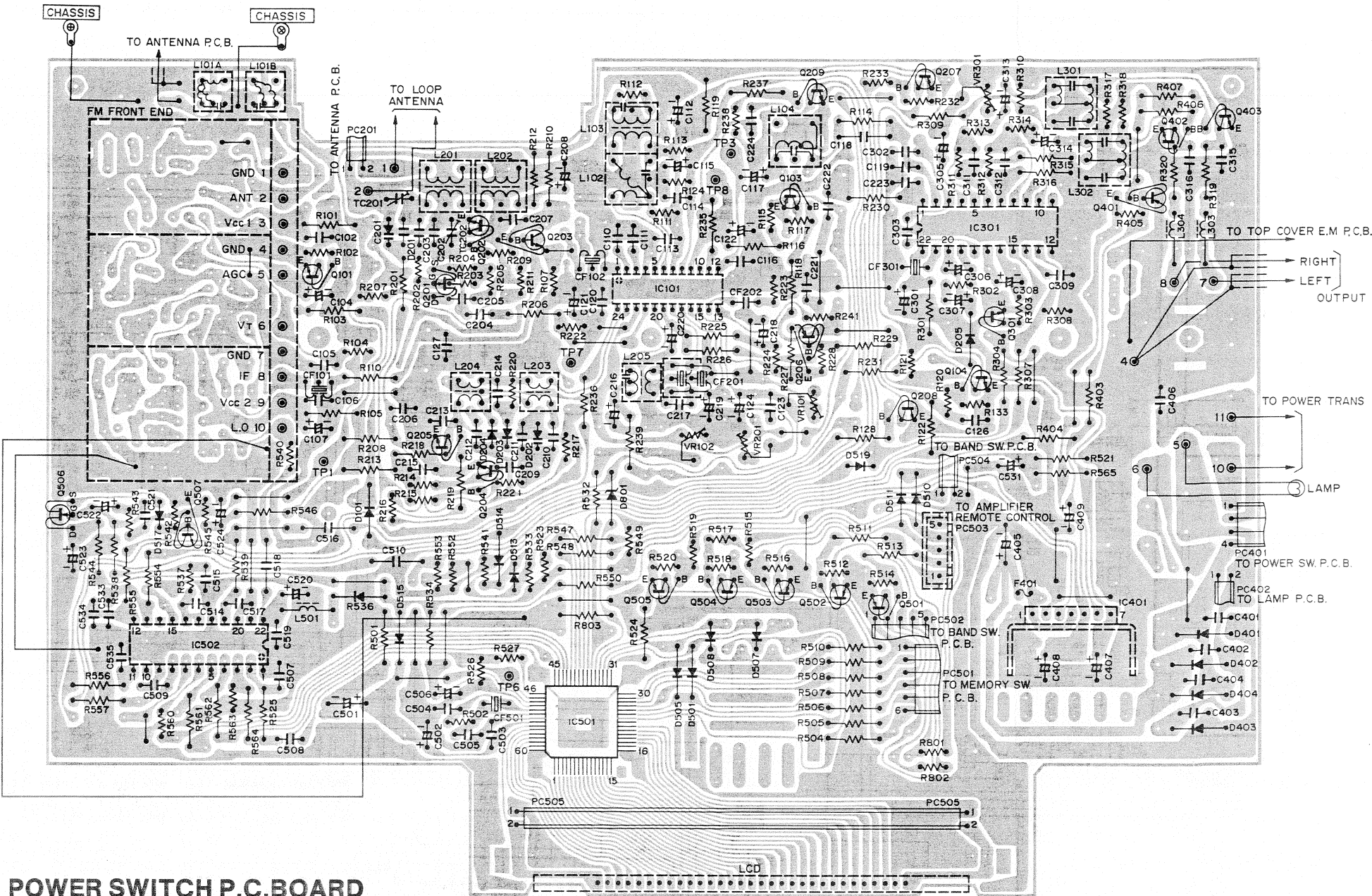
| Ref. No. | Part No. | Description | Q'ty | Ref. No. | Part No. | Description | Q'ty |
|----------|--------------|---------------------|------|--|------------------|--|------|
| R233 | 401 024 7400 | CARBON 10K JA 1/6W | 1 | R545 | 401 024 7400 | CARBON 10K JA 1/6W | 1 |
| R235 | 401 016 3809 | CARBON 2.2K JA 1/4W | 1 | R546 | 401 012 5708 | CARBON 1K JA 1/4W | 1 |
| R236 | 401 012 5708 | CARBON 1K JA 1/4W | 1 | R547 | 401 012 5708 | CARBON 1K JA 1/4W | 1 |
| R237 | 401 020 2904 | CARBON 47K JA 1/4W | 1 | R548 | 401 016 4806 | CARBON 22K JA 1/4W | 1 |
| R238 | 401 024 7707 | CARBON 100K JA 1/6W | 1 | R549 | 401 024 7400 | CARBON 10K JA 1/6W | 1 |
| R239 | 401 012 4107 | CARBON 100 JA 1/4W | 1 | R550 | 401 012 5708 | CARBON 1K JA 1/4W | 1 |
| R241 | 401 025 8208 | CARBON 22K JA 1/6W | 1 | R552 | 401 027 5908 | CARBON 68K JA 1/6W | 1 |
| R301 | 401 016 1102 | CARBON 22 JA 1/4W | 1 | R553 | 401 024 7707 | CARBON 100K JA 1/6W | 1 |
| R302 | 401 026 4308 | CARBON 3.3K JA 1/6W | 1 | R554 | 401 012 5708 | CARBON 1K JA 1/4W | 1 |
| R303 | 401 024 7400 | CARBON 10K JA 1/6W | 1 | R555 | 401 012 5708 | CARBON 1K JA 1/4W | 1 |
| R304 | 401 020 2904 | CARBON 47K JA 1/4W | 1 | R556 | 401 012 5708 | CARBON 1K JA 1/4W | 1 |
| R307 | 401 012 5708 | CARBON 1K JA 1/4W | 1 | R557 | 401 012 5708 | CARBON 1K JA 1/4W | 1 |
| R308 | 401 027 5908 | CARBON 68K JA 1/6W | 1 | R560 | 401 024 7004 | CARBON 1K JA 1/6W | 1 |
| R309 | 401 018 3807 | CARBON 3.3K JA 1/4W | 1 | R561 | 401 012 5708 | CARBON 1K JA 1/4W | 1 |
| R310 | 401 024 7400 | CARBON 10K JA 1/6W | 1 | R562 | 401 012 5708 | CARBON 1K JA 1/4W | 1 |
| R311 | 401 025 4903 | CARBON 180K JA 1/6W | 1 | R563 | 401 024 7400 | CARBON 10K JA 1/6W | 1 |
| R312 | 401 025 4903 | CARBON 180K JA 1/6W | 1 | R564 | 401 024 7004 | CARBON 1K JA 1/6W | 1 |
| R313 | 401 025 7805 | CARBON 2.2K JA 1/6W | 1 | R565 | 401 018 2800 | CARBON 330 JA 1/4W | 1 |
| R314 | 401 025 7805 | CARBON 2.2K JA 1/6W | 1 | R801 | 401 025 7805 | CARBON 2.2K JA 1/6W | 1 |
| R315 | 401 014 6109 | CARBON 150K JA 1/4W | 1 | R802 | 401 025 7805 | CARBON 2.2K JA 1/6W | 1 |
| R316 | 401 014 6109 | CARBON 150K JA 1/4W | 1 | R803 | 401 012 8105 | CARBON 100K JA 1/4W | 1 |
| R317 | 401 026 7002 | CARBON 3.9K JA 1/6W | 1 | The following each part is not needed in the FM-869 circuit. | | | |
| R318 | 401 026 7002 | CARBON 3.9K JA 1/6W | 1 | PC503 | 4-2369-731500 | Plug 5P | 1 |
| R319 | 401 012 5708 | CARBON 1K JA 1/4W | 1 | C531 | 403 049 1609 | ELECT 1U M 50V | 1 |
| R320 | 401 012 5708 | CARBON 1K JA 1/4W | 1 | D510 | 407 005 3805 | DIODE DS442-BT | 1 |
| R403 | 401 012 7009 | CARBON 10K JA 1/4W | 1 | D511 | 407 005 3805 | DIODE DS442-BT | 1 |
| R404 | 401 016 4806 | CARBON 22K JA 1/4W | 1 | Q501 | 405 004 5004 | TR 2SA608-G-NP | 1 |
| R405 | 401 024 7400 | CARBON 10K JA 1/6W | 1 | Q502 | 405 004 5004 | TR 2SA608-G-NP | 1 |
| R406 | 401 020 2003 | CARBON 4.7K JA 1/4W | 1 | Q503 | 405 004 5004 | TR 2SA608-G-NP | 1 |
| R407 | 401 020 2003 | CARBON 4.7K JA 1/4W | 1 | Q504 | 405 004 5004 | TR 2SA608-G-NP | 1 |
| R501 | 401 012 4503 | CARBON 100 JA 1/4W | 1 | Q505 | 405 004 5004 | TR 2SA608-G-NP | 1 |
| R502 | 401 027 2600 | CARBON 5.6K JA 1/6W | 1 | R511 | 401 014 6109 | CARBON 150K JA 1/4W | 1 |
| R504 | 401 012 7009 | CARBON 10K JA 1/4W | 1 | R512 | 401 027 5908 | CARBON 68K JA 1/6W | 1 |
| R505 | 401 012 7009 | CARBON 10K JA 1/4W | 1 | R513 | 401 014 6109 | CARBON 150K JA 1/4W | 1 |
| R506 | 401 012 7009 | CARBON 10K JA 1/4W | 1 | R514 | 401 027 5908 | CARBON 68K JA 1/6W | 1 |
| R507 | 401 012 7009 | CARBON 10K JA 1/4W | 1 | R515 | 401 025 2305 | CARBON 150K JA 1/6W | 1 |
| R508 | 401 018 3807 | CARBON 3.3K JA 1/4W | 1 | R516 | 401 027 5908 | CARBON 68K JA 1/6W | 1 |
| R509 | 401 018 3807 | CARBON 3.3K JA 1/4W | 1 | R517 | 401 025 2305 | CARBON 150K JA 1/6W | 1 |
| R510 | 401 018 3807 | CARBON 3.3K JA 1/4W | 1 | R518 | 401 027 5908 | CARBON 68K JA 1/6W | 1 |
| R511 | 401 014 6109 | CARBON 150K JA 1/4W | 1 | R519 | 401 025 2305 | CARBON 150K JA 1/6W | 1 |
| R512 | 401 027 5908 | CARBON 68K JA 1/6W | 1 | R520 | 401 027 5908 | CARBON 68K JA 1/6W | 1 |
| R513 | 401 014 6109 | CARBON 150K JA 1/4W | 1 | R521 | 401 020 0801 | CARBON 470 JA 1/4W | 1 |
| R514 | 401 027 5908 | CARBON 68K JA 1/6W | 1 | R524 | 401 018 3807 | CARBON 3.3K JA 1/4W | 1 |
| R515 | 401 025 2305 | CARBON 150K JA 1/6W | 1 | R565 | 401 018 2800 | CARBON 330 JA 1/4W | 1 |
| R516 | 401 027 5908 | CARBON 68K JA 1/6W | 1 | R801 | 401 025 7805 | CARBON 2.2K JA 1/6W | 1 |
| R517 | 401 025 2305 | CARBON 150K JA 1/6W | 1 | R802 | 401 025 7805 | CARBON 2.2K JA 1/6W | 1 |
| R518 | 401 027 5908 | CARBON 68K JA 1/6W | 1 | ANTENNA P.C.B. ASSY | | | |
| R519 | 401 025 2305 | CARBON 150K JA 1/6W | 1 | 21 | 141-0-1939-21051 | Antenna P.C.B. Assy | 1 |
| R520 | 401 027 5908 | CARBON 68K JA 1/6W | 1 | | 4-2372-01141 | Antenna Terminal 3P (Antenna) | 1 |
| R521 | 401 020 0801 | CARBON 470 JA 1/4W | 1 | L701 | 4-2539-71610 | Choke Coil (470μH) | 1 |
| R523 | 401 024 7400 | CARBON 10K JA 1/6W | 1 | C703 | 403 008 5204 | CERAMIC 10P D 50V | 1 |
| R524 | 401 018 3807 | CARBON 3.3K JA 1/4W | 1 | R703 | 401 018 3807 | CARBON 3.3K JA 1/4W | 1 |
| R525 | 401 016 2604 | CARBON 220 JA 1/4W | 1 | MEMORY SW. P.C.B. ASSY | | | |
| R526 | 401 024 7004 | CARBON 1K JA 1/6W | 1 | 22 | 141-0-1939-21060 | Memory SW. P.C.B. Assy | 1 |
| R527 | 401 027 8602 | CARBON 8.2K JA 1/6W | 1 | S701 | 4-2312-05300 | Keyboard Switch 6mm (Preset Station 1) | 1 |
| R532 | 401 012 5708 | CARBON 1K JA 1/4W | 1 | S702 | 4-2312-05300 | Keyboard Switch 6mm (Preset Station 2) | 1 |
| R533 | 401 024 7400 | CARBON 10K JA 1/6W | 1 | S703 | 4-2312-05300 | Keyboard Switch 6mm (Preset Station 3) | 1 |
| R534 | 401 012 8105 | CARBON 100K JA 1/4W | 1 | S704 | 4-2312-05300 | Keyboard Switch 6mm (Preset Station 4) | 1 |
| R537 | 401 026 1000 | CARBON 2.7K JA 1/6W | 1 | S705 | 4-2312-05300 | Keyboard Switch 6mm (Preset Station 5) | 1 |
| R538 | 401 017 1804 | CARBON 2.7K JA 1/4W | 1 | S706 | 4-2312-05300 | Keyboard Switch 6mm (Preset Station 6) | 1 |
| R539 | 401 012 5708 | CARBON 1K JA 1/4W | 1 | | | | |
| R540 | 401 026 9303 | CARBON 47 JA 1/6W | 1 | | | | |
| R541 | 401 027 5908 | CARBON 68K JA 1/6W | 1 | | | | |
| R542 | 401 027 5205 | CARBON 680 JA 1/6W | 1 | | | | |
| R543 | 401 024 7400 | CARBON 10K JA 1/6W | 1 | | | | |
| R544 | 401 020 0801 | CARBON 470 JA 1/4W | 1 | | | | |

P.C.BOARD PARTS LIST (Continued)

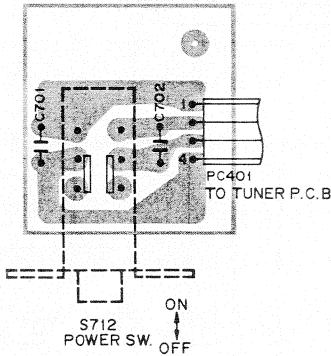
| Ref. No. | Part No. | Description | Q'ty |
|-----------------------------------|------------------|--------------------------------|------|
| BAND SW. P.C.B. ASSY | | | |
| 23 | 141-0-1939-21070 | Band SW. P.C.B. Assy | 1 |
| S707 | 4-2312-05300 | Keyboard Switch 6mm (FM-1/2/3) | 1 |
| S708 | 4-2312-05300 | Keyboard Switch 6mm (MW/LW) | 1 |
| S709 | 4-2312-05300 | Keyboard Switch 6mm (Up) | 1 |
| S710 | 4-2312-05300 | Keyboard Switch 6mm (Down) | 1 |
| S711 | 4-2312-05300 | Keyboard Switch 6mm (Mode) | 1 |
| POWER SW. P.C.B. ASSY | | | |
| 24 | 141-0-1939-21080 | Power SW. P.C.B. Assy | 1 |
| S712 | 4-2319-76831 | Switch Push 1 key (Power) | 1 |
| C701 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 |
| C702 | 403 069 8404 | CERAMIC 0.01U Z 50V | 1 |
| TOP COVER E.M. P.C.B. ASSY | | | |
| 25 | 141-0-1939-21090 | Top Cover E.M. P.C.B. Assy | 1 |
| | 141-2-3229-52100 | Plate Earth | 1 |
| LAMP P.C.B. ASSY | | | |
| 26 | 141-0-1939-21100 | Lamp P.C.B. Assy | 1 |
| | 4-6129-70760 | Lamp | 2 |
| | 131-2-4208-35900 | Spacer | 2 |
| EC TERMINAL P.C.B. ASSY | | | |
| 27 | 141-0-1939-21120 | EC Terminal P.C.B. Assy | 1 |
| | 4-2372-00830 | EC Terminal 1P | 2 |
| | 111-2-6220-11100 | Wire Wrap Terminal | 2 |

- NOTES:
1. Parts order must contain Model Number, Part Number and Description.
 2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

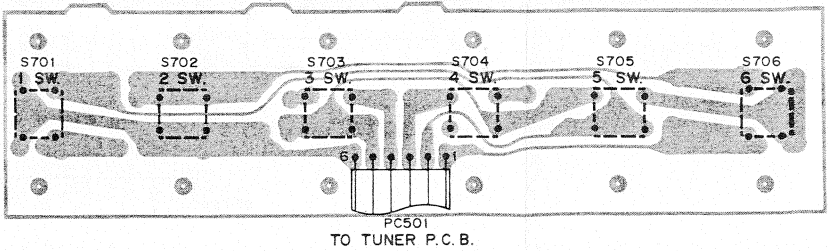
TUNER PRINTED CIRCUIT BOARD
(BOTTOM VIEW)



POWER SWITCH P.C.BOARD
(BOTTOM VIEW)



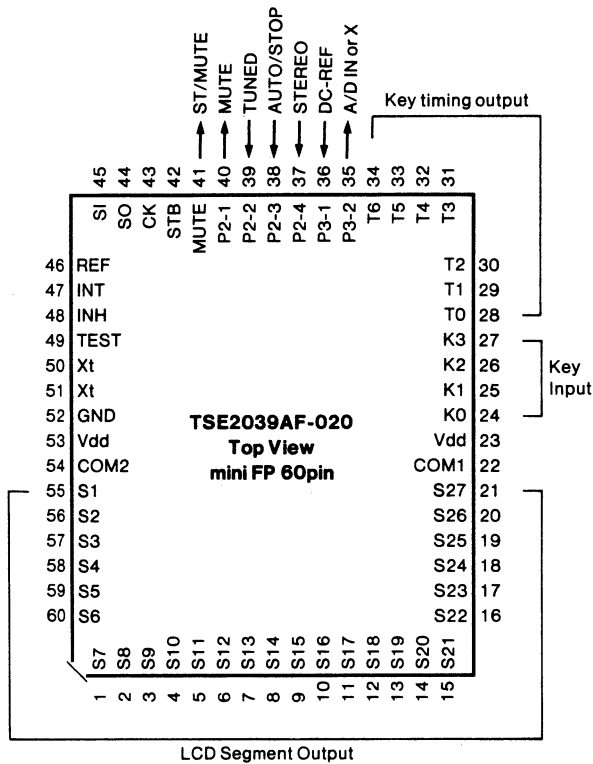
MEMORY SWITCH P.C.BOARD
(BOTTOM VIEW)



[illegible]

CPU PORT DESIGNATIONS (TSE 2039AF-020)

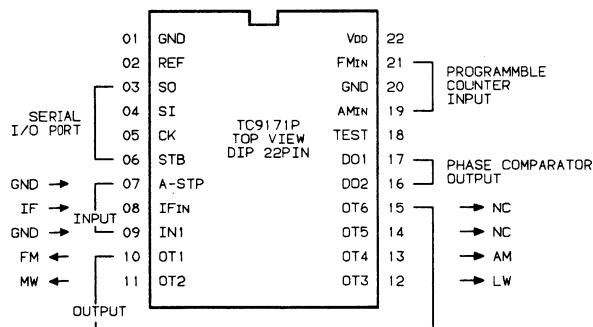
TSE 2039AF-020 OUTLINE



| Port | Pin No. | Segment Name | | Explanation of Function |
|------|---------|--------------|--------|--|
| | | COM1 | COM2 | |
| COM1 | 22 | COM1 | — | Common 1 |
| S27 | 21 | AM | FM1 | AM : MW (2 band) FM1 : FM1 band |
| S26 | 20 | MW | FM2 | MW : MW band FM2 : FM2 band |
| S25 | 19 | LW | FM3 | LW : LW band FM3 : FM3 band |
| S24 | 18 | AUTO | MANUAL | AUTO : Auto Scan MANUAL : Manual Scan |
| S23 | 17 | CH | 1bc | CH : 6 CH 1bc : 108.00MHz segment |
| S22 | 16 | [5] | STEREO | [5] : point 5 on level meter STEREO : Stereo In |
| S21 | 15 | TUNED | MUTING | TUNED : Input On MUTING : Stereo/Mute On |
| S20 | 14 | 2f | 2b | 2f-a : 108.00MHz segment |
| S19 | 13 | 2e | 2g | |
| S18 | 12 | 2d | 2c | |
| S17 | 11 | — | 2a | |
| S16 | 10 | 3f | 3b | 3f-a : 108.00MHz segment |
| S15 | 9 | 3e | 3g | |
| S14 | 8 | 3d | 3c | |
| S13 | 7 | FM dot | 3a | : 108.00MHz mark |
| S12 | 6 | 4f | 4b | 4f-a : 108.00MHz segment |
| S11 | 5 | 4e | 4g | |
| S10 | 4 | 4d | 4c | |
| S9 | 3 | [1] | 4a | [1] : point 1 on level meter (normally ON) |
| S8 | 2 | 5g | 5be | 5g-f : 108.00MHz segment, 0/5 |
| S7 | 1 | 5acdf | [2] | [2] : point 2 on level meter |
| S6 | 60 | [3] | kHz | [3] : point 3 on level meter kHz : MW/LW unit |
| S5 | 59 | [4] | MHz | [4] : point 4 on level meter MHz : FM unit |
| S4 | 58 | 7f | 7b | 7f-a : 6 CH segment |
| S3 | 57 | 7e | 7g | |
| S2 | 56 | 7d | 7c | |
| S1 | 55 | MEMORY | 7a | MEMORY : Store mode |
| COM2 | 54 | — | COM2 | Common 2 |

| Port | Pin No. | Name | Assignment | Active | Initial |
|------|---------|-------------|--------------------|--------|---------|
| MUTE | 41 | ST/MUTE | Stereo/Mute Output | L | L |
| P2-1 | 40 | MUTE | Mute Output | L | H |
| P2-2 | 39 | TUNED | Tuned Input | L | — |
| P2-3 | 38 | AUTO/STOP | Auto/Stop Input | L | — |
| P2-4 | 37 | STEREO | Stereo Ind. Input | L | — |
| P3-1 | 36 | DC-REF | A/D Ref Input | — | — |
| P3-2 | 35 | A/D IN or X | Signal Meter Input | — | — |
| | | | Function Output | H | L |

TC 9171P OUTLINE



| Port | Pin No. | Name | Assignment | Active | Initial |
|--------|---------|-------|----------------|--------|---------|
| A-Stop | 07 | GND | Non Use Input | — | L |
| IF-IN | 08 | IF-IN | IF Input | — | — |
| IN1 | 09 | GND | Non Use Input | — | L |
| OT1 | 10 | FM | Band Output | H | H |
| OT2 | 11 | MW | Band Output | H | L |
| OT3 | 12 | LW | Band Output | H | L |
| OT4 | 13 | AM | Band Output | H | L |
| OT5 | 14 | NC | Non Use Output | — | L |
| OT6 | 15 | NC | Non Use Output | — | L |

NOTES:

- All resistors values are indicated in "ohm" ($K=10^3$, $M=10^6$).
- All capacitors values are indicated in " μF " ($P=10^{-12}$).
- All voltages indicated on the schematics are measured under the following conditions.

a. Use a V.T.V.M.

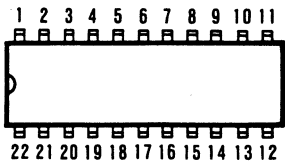
Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

- All voltages $\pm 10\%$ with respect to chassis ground
- No signals at input terminals
- AC input at 220 volts 50 Hz
- This is a basic schematic diagram.

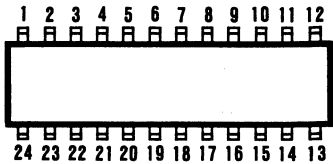
SEMICONDUCTOR LEAD IDENTIFICATION

| TRANSISTOR | FRONT VIEW | BOTTOM VIEW |
|---|------------|-------------|
| 2SA 608 2SC 536 2SC 1740 | | |
| 2SK 246 | | |
| 2SD 1012 | | |
| TERMINAL NAME | | |
| B → BASE C → COLLECTOR E → EMITTER S → SOURCE G → GATE D → DRAIN | | |

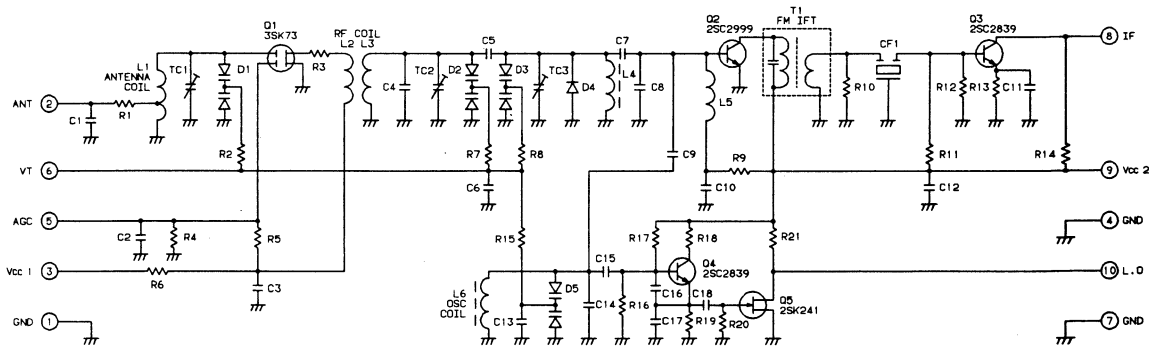
TC 9171 P/LA 3400 BOTTOM VIEWS



LA 1266 BOTTOM VIEW



FRONT END SCHEMATIC DIAGRAM



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